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UNIVERSITY OF ILLINOIS
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⑤ 427100 ① TID 2B 263
⑨ Quarterly Report, ✓
⑩ Jan. 31, 1964,
Group and Organizational
Factors Influencing Creativity
Amended to Include
Communication, Cooperation and Negotiation
In Culturally Heterogeneous Groups.
⑪ C.R.P.D.C.

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Report of Progress under Contract ARPA Order # 454,
Project Code 2870 Nonr-1834(36) with the Office of Naval Research

⑫ Cont'd. ⑬ ⑭ ⑮ ⑯ ⑰
⑩ by Fred E. Fiedler, (Principal Investigator)
Charles E. Osgood, Lawrence M. Stolzow, Harry C. Triandis.

WAB 2004

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Sub-Project IIntercultural Negotiations (H. C. Triandis and C. E. Osgood)

The purpose of this phase is (a) to develop procedures for the measurement of denotative meaning; (b) to develop procedures for the quantitative description of significant cultural variables; and (c) to explore the significance of differences in culture and in connotative and denotative meaning in negotiation situations. Emphasis is on the development of instruments that are to be used in the measurement of the key variables of the experimental design. Specifically, it is concerned with the development of quantitative procedures for the measurement of (a) the denotative meaning of the concepts used in negotiation and (b) the behaviors that are perceived as appropriate for interaction with members of another culture. This project, in addition, is to collect quantitative information which may be used by Phase III of Sub-Project II in the development of culture assimilators (see below). The task of developing appropriate instruments and materials for the culture assimilator involves one area of overlap with the present project.

Following are a series of studies designed to develop instruments that are to be used in the measurement or control of key variables likely to be important in the study of negotiations, and to collect quantitative information which may be used by Sub-Project II in the development of culture assimilators.

Study A: Procedures for the Measurement of Denotive Meaning (K. Forster, E. Davis, H. C. Triandis, C. E. Osgood)

Two studies are currently under way.

Study A1: Developments in the Measurement of Meaning Similarity (Kenneth Forster)

The purpose of this study is to investigate procedures for measuring meaning

similarity, with special emphasis on factors which are not affective in nature. It is theorized that meaning similarity is a function of affective similarity (as measured by differences between semantic differential profiles), associative connections (as measured by associative overlap indices), and some third factor (not currently measured by any procedure), which could be called denotative similarity.

It was planned to use the method of triads to obtain a more precise characterization of the ways in which Ss perceived global similarities in meaning -- judgments of similarity of meaning in this task being assumed to be affected by all three factors listed above. The control exercised over Ss judgments by affective factors was minimized by using concepts which had highly similar semantic differential profiles. It was hoped that by (a) factoring the matrix of inter-concept distances yielded by the method of triads, and (b) closely inspecting the reasons offered by Ss for their judgments, that it would be possible to identify further dimensions of meaning which would not be affective in nature.

For each of 40 Ss, two sets of 10 concepts having similar semantic differential profiles were analyzed by the method of triads; for each S a matrix of distances between the concepts was derived from that S's rating of the concepts on the semantic differential; for each S a matrix of associative overlaps between the concepts was also determined, using the method of continuous associations.

It was considered that an analysis of the information provided by the triads should first approach the question of independence -- i.e., is this information independent of information already available from techniques such as the semantic differential or associative overlap. For each S, the judgment

made by S on each triad was compared with the judgment that would have been made if S had been responding solely on the basis of semantic differential profiles, and with the judgment that would have been made if S had been responding solely on the basis of associative overlap. By preparing frequency distributions of these various judgments for each triad over the 40 Ss, it is possible to calculate the correlation between the triad judgments and the predictions based on the semantic differential profiles or associative overlaps. The typical pattern of results is as follows: for triad judgments and semantic differential predictions, $r=.50$; for triad judgments and associative overlap predictions, $r=.85$; for semantic differential and associative overlap predictions, $r=.50$. Calculation of partial correlations reveals that the predictive capacity of the associative overlap is virtually unmodified when the effect of the semantic differential predictions is partialled out, but that the predictive capacity of the semantic differential approaches zero when the effects of associative overlap predictions are partialled out. In other words, the associative overlap information essentially includes a great deal of the information provided by the semantic differential, but also includes other information. Inspection of the predictive capacities reveals that the triad method yields very little information which is independent of affective or associative factors.

Inspection of the dimensions yielded by factoring the distances provided by the triad method showed one clear factor -- that of abstract-concrete. Other factors appeared to be entirely specific to the particular sample of concepts employed. It is inferred that these factors must represent associative connections between words. Inspection of the reasons offered by Ss for their triad judgments revealed that these also are of an associative nature. Practically none of these reasons could be conceptualized as dimensions of any generality at all.

The major conclusion resulting from this research is that it is not likely that the method of triads will reveal the properties of meaning similarity which are independent of affective or associative factors. It has been conclusively demonstrated that when Ss are required to make global judgments of meaning similarity, these judgments are made on the basis of affective and associative factors. The strong implication for the negotiation experiments discussed in other sections of this report, is that the agreement between two persons about the meaning of a concept may be largely controlled by the ways in which that concept is linked to other concepts by means of associative and affective factors.

Study A2: The Measurement of Implicative Meaning (E. E. Davis and H. C. Triandis)

In addition to measures of connotative meaning provided by semantic differential ratings of concepts it would be desirable to have some information concerning other aspects of the meaning of terms which play a key role in negotiations. For example, if negotiators from the United States and the Soviet Union were both using the term "inspection" in a negotiation session, it is likely that they would differ not only with respect to the connotative meaning which they attach to this term but also with respect to what they think the term actually "means" or implies. Thus, the Russians might think that the term "inspection" implies "spying", "prying into other people's affairs", etc. Whereas the United States negotiators might think that this term implies "security for all", "fairness", etc.

In order to get at what has tentatively been called "implicative meaning" an instrument has been developed and is in the first stages of preliminary pretesting. A cursory inspection of the results of the first pretesting of this instrument shows promise and would seem to justify further pursuance of

this aspect of the study. A more complete analysis of this first stage of the pretest instrument is now underway and stage 2 of the pretesting for this instrument will be initiated in February.

Study B: Norms of Interpersonal Behavior (H. C. Triandis and C. E. Osgood)

A measuring instrument which will be called the "Behavioral Differential" will be used in the study of similarities in culture among subjects engaged in negotiations. To study similarities, it is proposed that a comparison be made of norms of interpersonal behavior that connect social role-pairs, e.g. Mother-Daughter, Employer-Employee, Husband-Wife, etc., and social behaviors. The Behavioral Differentials under development will be improved versions of those employed by Triandis (1964). The new differentials will require subjects to judge several role-pairs against a set of scales described by behaviors that are perceived to occur frequently in a culture. For example:

Mother to Son
Would not : A : : : : : : Would
Obey his command

where "A" designates the probable mean response from American subjects and "I" designates the probable mean response of traditional Indian subjects. Future analyses will isolate elements of the role and compare responses to different items as follows:

A 55 Year Old Lady To A 30 Year Old Man
Would not : A : : : : : : Would
Obey his command

Such comparisons will give information concerning the major determinants of roles (i.e. age, sex, lineage, etc.) in a particular culture. This information should be useful for the culture assimilators.

The overall purpose of Study B is to ascertain norms of interpersonal behavior. The purpose of Study B1 is to develop a method of quantifying and

comparing norms of interpersonal behavior in terms of social-role pairs, e.g., mother-daughter, employer-employee, husband-wife, and the behaviors associating them. The investigator in this study is Dr. E. W. Katz under the direction of Professors Osgood and Triandis. The purpose of Study B2 is to discover the typical behaviors in a culture through a method of elicitation. This study is a short-cut method for obtaining the same information which will be found in Study B1. The investigator is Mrs. Ellie Mikesell, under the direction of Professors Triandis and Osgood.

Study B1: Norms of Interpersonal Behavior Through Content Analysis

The contemporary American short story was selected as a source of interaction material on the assumption that the authors reflect in their stories sharpened perceptions of people in interaction. The authors may therefore be regarded as spokesmen for their culture. The short story appeared to be well adapted to obtain feelings associated with role-pairs which might otherwise be impossible to discover.

A method was desired whereby the analysis of the stories would reflect some of the subtleties of interpersonal feelings and behaviors inherent in this rich medium. Customary methods of content analysis, based on manifest content, were inappropriate for this purpose. Therefore a new method of analysis was devised which would describe the behavior or feeling of Person A to Person B, not only in terms of their manifest content, but also at the level of what significance the behavior or feeling had for the interaction.

Rules for the content analysis of interpersonal behavior have been completed and are presently being applied by Miss Carrie Nisinson and Mrs. Sharumugam to short stories in order to perform a reliability check with stories analyzed by Dr. Katz.

Seventeen American short stories have been analyzed to date and is continuing and the results of this analysis have been used as a preliminary basis for determining the adequacy of various systems of dimensionalizing the data. In order to obtain a general system, it would appear that behaviors should be categorized independently of roles; the roles should be categorized on the basis of factors such as (1) helping relationships (e.g. therapist-client, lawyer-client, doctor-patient, teacher-student, clergyman-parishioner, parent-child) and (2) authority relationships (e.g. army officer-enlisted man, employer-employee). It will be noted that the helping relationships also imply a kind of authority in the sense of a stronger person helping a weaker person.

In a preliminary classification of behaviors, three categories were used (superior-inferior, positive-negative evaluation, and passive-active). However, lack of agreement in assignment of behaviors to the active-passive dimension used by other workers in the field (Raush, Dittmann and Taylor (5); Leary (3); and Chance (2) suggested that this system is oversimplified.

Classification of behavior systems are now being examined in an attempt to select and/or develop an adequate system for the present study. Among the systems of previous investigators which have been examined and rejected are those of Leary (3), Miller (4) and Bales (1). An empirical check will be done to determine the adequacy of categories and the proper assignment of behaviors to these categories.

Study B2: Norms of Interpersonal Behavior Through Elicitation

As mentioned above, the purpose of Study B2 is to discover the typical behaviors in a culture through a method of elicitation. Essentially, this study is a short-cut method for obtaining the same information which will be found in Study B1. By means of sentence completion procedures, roles and behaviors will

be elicited from subjects. A pilot study is underway using this technique and its results will be compared with the results obtained from Study B1. If the results are comparable, the elicitation procedure, because it is likely to be less time consuming, will be used in the work to be carried out in the remaining cultures. At the present time it is not known whether or not the elicitation procedure will provide satisfactory results, whereas there is evidence (the Triandis 1964 study) that the content analysis procedure will give usable materials. Study B2 will be completed in the United States, and, if it appears promising, it will be repeated in India.

As a result of Study B, it would be possible to develop techniques for the observation of the content of negotiations or any other social interactions. These procedures should be similar to those developed by Bales (1950) and others, except that they would have cross-cultural generality and would be applicable to a wider range of social behaviors.

Study C: The Development of Behavioral Differentials (H. C. Triandis, A. V. Shanmugam, Y. Tanaka)

The purpose of this study is to construct behavioral differentials which will be employed in the study of similarities in culture among subjects engaged in negotiation. This study will use the material results of Study B. Since the results of Study B are not yet available, no one is now working on this study. However, preliminary studies employing the already existing behavioral differentials previously used by Triandis (1964) are now being planned by Dr. Shanmugam in India and Dr. Tanaka in Japan. These studies should discover any problems peculiar to the use of such differentials and will give our field work collaborators some experience with already existing techniques.

Study D: Pilot Study on Negotiation (H. C. Triandis, E. Davis)

The purpose of this study is to investigate experimental designs and conditions (tasks, level of abstraction of concepts, etc.) for the study of

negotiation in culturally heterogeneous groups. This study is being conducted by Mr. Earl E. Davis under the direction of Professor Triandis. The study is essentially a pilot study of the negotiation procedures which are likely to be employed in the main studies.

The study of experimental designs and conditions involved in negotiations between culturally heterogeneous groups is now nearing the end of the pre-testing stage. The main pilot study is scheduled to start in the early part of February. Previously, Davis had completed a review of the literature on negotiation and Triandis and Davis have developed theoretical models for the description of negotiations and procedures for the testing of these models. In the first main pilot study, to start in February, experimental negotiations will be conducted on civil rights issues, both with culturally homogeneous and culturally heterogeneous groups. American white students who are pro-civil rights will negotiate with confederates who are also American white students taking an anti-civil rights stand. Furthermore, American white subjects who are anti-civil rights will negotiate with both Negro and white confederates taking a pro-civil rights stand.

A number of pretests relating to the main negotiation study on civil rights issues have been conducted. The data from these pretests have been analysed or are in the process of analysis: Pretest I Judgments of persons and issues: Approximately 200 subjects were administered a questionnaire involving both semantic differential and behavioral differential (see above) judgments of complex person stimuli differing in race, sex, and religion; and semantic differential judgments on a large number of current issues, including civil rights issues. Analyses of the data include: a) factor analysis of semantic differential scales (completed), b) factor analysis of behavioral differential scales (completed) c) factor analysis of issues (completed), d) factor analysis to determine the relationship between semantic differential and behavioral scales (underway),

e) factor analysis to determine the orthogonality of judgments towards persons and issues (underway). Pretest II Scaling of Position Statements for Negotiations: Approximately 100 statements representing a variety of different positions that could be taken on a number of civil rights issues were administered to 30 subjects (members of Davis' social psychology class) and Thurstone scale values were obtained by use of a paper and pencil technique involving rating statements on an eleven point scale (analysis completed). Since the scale values and interquartile ranges of the distributions were not completely satisfactory these statements have been administered again to 50 Ss from the subject pool, using this time both the paper and pencil techniques and the sorting procedure to obtain Thurstone scale values (analysis underway). As a sub-study of this particular pretest, semantic differential ratings of civil rights issues were also obtained from the first group of 30 Ss. In order to critically examine the hypothesis recently reasserted in a replication study by Hinkley concerning the relationship between attitudes and Thurstone scale values.

Sub-Project II (L. M. Stolurow)

This sub-project is divided into three phases: Phase I, Research on Computer Programs for Teaching; Phase II, Research on Translated Programmed Learning Materials; and Phase III, Research on Cultural Assimilators.

Phase I: Research on Computer Programs for Teaching (Henry C. Lizziert, Scott Krueger)

The purpose of this phase is to develop concepts and effective techniques for translating educational (teaching) programs into a symbolic form for systematic study of the relative effectiveness of different decision rules. Teaching programs are representations of decision rules. The rules are coded in a form that permits the use of a computer to develop techniques which implement various decision strategies. This permits optimal outcomes of exposure to programmed materials. The Training Research Laboratories' computer based teaching machine

system, SOCRATES (System for Organizing Content to Review and Teach Educational Subjects) will be used in this work. Two problems are being studied.

(a) Computer Programming Procedures -- Task Author: The problem is to generate from basic facts about a culture, a set of frames and a variety of organizations of these self-instructional frames. The teaching procedures to be used permits a large amount of student control. A general plan for Project Author has been developed whereby a computer will be able to generate programs on demand from information stored in its memory. Personnel will not have to compose frames since basic computer rules will take care of the composition including the selection of needed sub-routines, such as vanishing and review.

(b) Computer Programming Procedures -- Task Teacher: The objective of the project is to develop a decision structure model with sufficient built-in flexibility so that decision rules can be changed or chosen as desired. The purpose of building this model is to allow teaching strategies to be adapted to the abilities and characteristics of the learner. A computer programming procedure has now been completed and has been code checked. Work is now proceeding toward refining this and related programs. Some of these programs are employed in order to implement the decision strategies of the basic program.

Phase II: Translation of Existing Programed Materials Into Foreign Languages And Tryout in Foreign Countries (James Zartman, Philip O'Dell)

The purpose of this phase is to determine cultural differences (a) in the relationships which particular abilities have with performance on the examination covering this program.; (b) in the relationships which particular personality variables have with performance on post-programed-learning tests; and (c) in the relative strength of specific programed learning variables such as prompting, confirmation, etc. The focus will be on the effects of cultural differences on known translated versions of programs. American and foreign high school

students will be used primarily where the foreign students have English as a second language. In addition, studies will replicate the English version of the program, but with the program translated into the native language, and the relative effectiveness of different programing variables will be examined to determine whether or not the same pattern of differences in examination scores appear as were obtained with the English version.

Procedure:

Several countries will participate in this phase. To date, arrangements are being made to work in Sweden, Thailand, Italy, India, Japan, Finland and France. The procedure is to contact the Ministry of Education, University Professors or school administrators and secure cooperation in the project to try out programed materials. In most cases, the work will be done with High School students.

The necessary arrangements for translating existing programs into foreign languages are being made. Progress in achieving the translation of programs into other languages appears to be a slow process. Not only must this wait for sometimes slow mail communication but also for the actual translation of the programs. Governmental approval (in most cases) is pre-requisite of such work because of the different educational-administrative structures of other countries. Such approval often involves additional delays.

(a) Ability Patterns -- Task Apt: In each country studies will be conducted to determine the effects of cultural differences on the relationships between specific abilities and performance on post-programed-learning tests. The general plan for these studies is based upon the work of Smith (1962) and Cartwright (1962). Both studies indicated that different conditions of learning result in different effects of existent abilities on learning. In the Smith

study, for example, the different conditions of learning studied were a conventional method of instruction and three different types of programmed materials. In the Cartwright study two different sequences of the same frames were compared in terms of immediate achievement, retention and transfer. In each country an attempt will be made to identify some of the variance common to specific mental abilities and performance on an achievement test following a learning task accomplished under different conditions of learning. These studies are to be replicated with students in foreign countries to determine whether cultural differences have an effect on the pattern of correlations.

(b) Programing Procedures -- Task Pac: A second line of research will be concerned with the relative effectiveness of specific programmed learning variables. Gagne & Brown (1961) have shown that a guided discovery type of learning is more effective, in terms of transfer of training, than a rule-and-example ("Ruleg") method. This confirms the results of a series of studies (Katona, 1940; Hilgard, et al., 1953; Craig, 1953) which have shown that for American students the "understanding" type of learning is better than "rote memorization," at least on some measures of learning. In this series the plan is to repeat the Gagne & Brown study initially and to examine the same question with other materials in each of several different cultures. Presumably cultural differences in the prevailing classroom atmosphere (e.g., democratic vs. authoritarian) will make a difference in the effectiveness of different programming procedures.

(c) Personality Differences -- Task Pers: A third line of research will look for relationships between personality differences and the effects of performance evaluation during learning. The hypothesis can be advanced that the relative effectiveness of different methods of teaching depends to a

measurable extent upon personality variables. If supported, then personality traits which are assumed to be determined by culture could be the key to the relative effectiveness of different types of teaching. This hypothesis can be made more specific by considering an example. The relative effectiveness of a "discovery" method vs. a more authoritarian type of teaching will be different in different cultures varying on a democratic-authoritarian dimension. To ascertain and measure this relationship would require data on frequency of authoritarian and democratic practices in schools. Then an attempt can be made to determine whether culture differences differentially affect the effectiveness of various methods of teaching, without trying to establish the exact nature of these cultural differences.

To this purpose plans are being made to replicate the Gagne & Brown study on a sample of Italian students. The programmed materials used by Gagné & Brown will be used in this experiment, since their relative effectiveness for an American population has already been shown. A second study will use the "expository" and "discovery" programs of Wolfe (1963).

Phase III: The Development of Assimilators (Eleanor Dobbins, Weera Yuda, W. Wichiarajote, Dominico Parisi)

The cultural assimilator-self-instructional materials designed as a training instrument for participating in cross cultural interactions -- bargaining and negotiating -- will be made up of three elements. The first will be bargaining and negotiation strategy. The second will be the general cultural disposition focusing on cultural differences which, if unknown, might cause misinterpretation or misunderstanding. The third element will be specific, factual information related to a particular problem.

The major emphasis of the work to date has been on the second element -- information on critical cultural differences. The problem was, first, one of

determining what areas in any culture are critical. The approach began with interviews with foreign students from Italy, Thailand and the Philippines on the University of Illinois campus. These interviews employed a modified critical incident technique and resulted in a collection of personal experiences which were largely examples of reactions to cultural differences encountered. When a student's expectations of how things would be were not met by the actual situation. The collection of incidents provided a basis for generating terms to be used in constructing a combined semantic and behavioral differential. From analysis of critical incidents we selected polar terms such as "cooperative-competitive, flexible-inflexible", etc., which when combined with stimulus words using both a role and a context, e.g., "American teacher losing face", will constitute the semantic and behavioral differential.

Once constructed, the instrument can be put on the computer-based teaching machines in the Training Research Laboratory to be given to students here and can be exported to enlarge the sample, validate the information, and secure samples from a variety of cultures. For purposes of comparing data from different cultures a three dimensional matrix was constructed. Comparison by cells will determine in what areas there are differences. These differences then indicate potential areas of conflict and serve to show where it is necessary to modify behavior and attitudes in the negotiating and bargaining sessions.

This phase of the project will interact with Phase I. With culturally relevant informational elements stored, the computer will, on demand, organize selected elements and will present the information in the form of instructional frames to the student.

Sub Project III (F. E. Fiedler)

This sub-project was concerned with group structural and leader variables which affect teamwork in tasks requiring creativity. The major emphasis in the original project was on creative team processes exemplified in research and development work. Groups involved in such tasks are generally composed of specialists whose heterogeneity in technical training, interests and attitudes gives rise to the difficult group situations encountered in cross-disciplinary research. The amended contract extends the research to groups having cross-cultural and cross-language membership composition. Following are a series of studies being conducted under Sub-Project III.

Study A: Creativity of Heterogeneous Dyads and Triads

Previous reports have described an investigation to test the effects of cross-cultural background composition of group members on group performance on creative tasks. This study utilized 36 dyads composed of Indians and Americans who were graduate students at the University of Illinois. In addition, 36 leaders were given differential instruction to act in terms of Hemphill's leadership styles of "consideration" or "initiation of structure" behavior. After the dyadic experience, group members were reassembled into new groups and assigned to one leader who had been given one of the two types of instruction. Leaders also differed in LPC scores, having been previously selected on that basis. Three Technical Reports are forthcoming as a result of this study. The first, by Professor Triandis and Mrs. Ellie Mikesell, will report on the creativity of culturally heterogeneous dyads. The second report, by Mr. Lynn Anderson, will be on the creativity of heterogeneous triads. The third report, by Professors Triandis, Fishbein, and Mrs. Mikesell, will be on the social distance among subjects participating in the study.

Study B: Creativity Under Stressful and Relaxed Conditions

Previous Quarterly Reports have described two experiments on group creativity under relaxed and relatively stressful conditions. The first study was conducted during a leadership training seminar for mental health association members in Ohio. The second study, designed to validate the mental health workshop group, was conducted during a Unitarian-Universalist leadership training conference held in November 1962 in Toronto, Canada. Two reports of this second are now in preparation. The first, by Professor Fiedler and Messrs. Hackman and Meuwese, is on leader attitudes and group creativity under relaxed and stressful group conditions. Verbal passages composed by groups of high LPC leaders were judged superior to those of low LPC leaders under the relaxed condition, whereas no differences were obtained under the stressful condition. The results support findings of previous investigations obtained by Meuwese in his study of ROTC cadets where strength and the relationships between the influence of leader ability and interpersonal perception on group creativity under differing stress situations was found to be influenced by the amount and kind of stress present in the group. The second report will be based on an analysis of questionnaire data. It will show the influence of task stress on group processes and member attitudes and the interaction of processes, attitudes and task characteristics with selected leader characteristics.

Study C: Test of Prediction of Leadership Effectiveness Model

A preliminary test of Fiedler's contingency model for the prediction of leadership effectiveness if being undertaken by Professor Martin Fishbein, Miss Grace Tsai and Miss Eva Sherashevski. Fiedler (1963) has recently proposed a model to account for the differential obtained relations between a leader's esteem for his least preferred co-worker and group effectiveness. Briefly, Fiedler suggests that the relation between LPC and effectiveness is a function

of the group-task situation in which the group is working. The model identifies three dimensions of group-task situations (i.e., affective leader-group relations; the structure of the task; and the power position of the leader) that serve to define eight different situations (e.g., a situation with good affective leader-group relations, where the group is working on a highly unstructured task, and the leader has a low power position). Fiedler suggests that these different types of situations call for different types of leadership behavior. Thus, for example, the behavior manifested by High LPC leaders may be appropriate when the affective leader-group relations are positive, the leader has low power, and the task is unstructured.

As an initial test of the model, the present study will attempt to investigate subjects 'expectations' about the characteristics and behaviors of 'the most effective leader' in each of the eight group-task situations. Considering the above, it is hypothesized that different kinds of expectations will be obtained from subjects when they view different situations. Further, since the eight situations comprise a $2 \times 2 \times 2$ analysis of variance design, the relative perceived importance of each dimension of the contingency model may be assessed. In addition, subjects differing in LPC should have different expectations about the characteristics and behaviors of 'the most effective leader' in the different group-task situations. Other hypotheses relevant to the contingency model and the distinction between High and Low LPC people will also be tested.

Some personality data, including esteem ratings of the least-preferred co-worker, will be obtained from 200 male subjects. Each subject will then be asked to rate 'the most effective leader' as well as himself, 'as a group member' in each of the eight group-task situations defined by the contingency

model. Subject's ratings of both 'the most effective leader' and himself will be done on two standardized questionnaires; (1) Fiedler's standard esteem scales, and (2) a behavioral description questionnaire derived from Bales' (1950) categories of interaction.

The major hypotheses will be tested through the utilization of analysis of variance techniques. Most analyses will be $3 \times 2 \times 2 \times 2$ factorial designs, with the main effects being (1) obtained LPC scores (high versus medium versus low); (2) affective relations (good versus bad); (3) task structure (structured versus unstructured); and (4) power position (high versus low).

The dependent variables considered in the analyses will include the following: (1) ratings of expected positive socio-emotional behavior; (2) ratings of expected negative socio-emotional behavior; (3) ratings of expected positive task behavior; (4) ratings of expected negative task behavior; and (5) selected factor scores from the esteem ratings. Separate analyses will be conducted for the data obtained from ratings of most effective leader and self.

In addition, other analyses, taking some of the personality variables into account (e.g., authoritarianism, open versus close mindedness, intelligence) will be conducted, since other investigators (e.g., Foa, Vroom and Mann) have found difference in expectancies between authoritarian and non-authoritarian subjects.

Data collection has been completed in the above study, and analyses are in progress.

Study D: Interculturally Composed Groups

Professor Fiedler has been engaged in preparing a large scale experiment on the effectiveness of military groups which have culturally and linguistically mixed membership. The study will seek to determine how the type of leadership

as well as certain organizational factors affect the performance of such mixed, multi-language groups on different types of tasks. The research is planned within the general framework of Fiedler's Contingency Theory of leadership. Unless major changes in plans are necessitated by unforeseen circumstances, the study will be conducted during the latter part of February using Belgian naval personnel consisting of Flemish and Walloon naval seamen.

The research team, in addition to Dr. Fiedler, consists of Professor J. M. Nuttin, Jr., and Lic. Annie Becker of the University of Louvain, as well as five students at the advanced level. Dr. W. A. T. Meuseese, now at the Technische Hogeschool at Eindhoven, The Netherlands, is also participating in the Research.

Professor Fiedler has served as a consultant to the Centre d' Etudes Sociale of the Belgian Ministry of Defense. He attended an ONR-SSRC sponsored invitational conference in Sorrento, Italy in December, and he is also conducting preliminary studies of Leadership in international organizations.

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University of Illinois Department of Psychology

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February 20, 1964

The Director of ARPA
c/o Office of Naval Research
Department of the Navy
Washington 25, D.C.

Gentlemen:

In reference to the Quarterly Technical Report of January, 1964, on Contract Number Nonr-1834(36), Group and Organizational Factors Influencing Creativity, Amended to Include Communication, Cooperation and Negotiation in Culturally Heterogeneous Groups, the following corrections are reported:

On Page 10, the name should be spelled Henry C. Lippincott. On Page 11, the name should be spelled Phillip Odell. On Page 14, the name should be spelled Weerayuda Wichiarajote. These persons serve on the project without pay.

Sincerely,

Howard M. Bobren

Howard M. Bobren
Project Coordinator

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